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In enumerating the ecclesiastical writers among those who may be consulted with advantage, for the ancient history and comparative geography of Asia Minor, it is not meant to be implied that the monument, the description of which suggested this digression, was contemporary with them. At the same time, we are not inclined to believe that it, or others of a kindred character in Asia Minor, are necessarily of a very remote era. Many of the rock carvings of Persia were contemporaneous with the Roman empire. The military operations and colonies of that state transplanted superstitions from their native soil to the most remote regions. Isis had temples reared at Rome, and Mithra was sculptured on the rocks of Gaul. The allegorical paganism of the Alexandrian school, and the wild heresies of some of the Gnostic sects, favoured the amalgamation of the most heterogeneous god-notions and forms of worship. The Confessions of St. Augustine show that, even so late as his time, the popular mind was in many places essentially pagan. This was an age of very low artistical taste and talent; and lubberly shapelessness is as much, if not more, a characteristic of retrograding than of infant art. The figures described in the passage quoted above, in so far as we can judge of them from the accompanying drawing, appear to us to have more analogy to the figures on the gnostic medals or talismans than to the early sculptures of Egypt. Nor are the Cyclopean blocks stumbling-blocks in the way of this conjecture: the huge stones of Balbek were quarried under the Roman emperors. This, however, is a mere conjectural hint, thrown out to suggest examination in a certain quarter. As suggestive of inquiry all conjectures are valuable; for any thing beyond this the most plausible conjectures have no value at all.

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III.—*The National Atlas of Historical, Commercial, and Political Geography, constructed from the most recent and authentic sources.* By ALEXANDER KEITH JOHNSTON, F. R. G. S., Geographer (at Edinburgh) in Ordinary to Her Majesty. Accompanied by Maps and Illustrations of the Physical Geography of the Globe, by Dr. Heinrich Berghaus, Professor of Geography, Berlin; and an Ethnographic Map of Europe, by Dr. Gustaf Kombst; Edinburgh, 1843. [By the Editor.]

THE feature of this new atlas which first arrested our attention was the physical geography of Professor Berghaus. This part of the work consists of that distinguished geographer's map-illustrations of Humboldt's system of isothermal curves, of the geographical distributions of the currents of air, of a survey of the culture of plants, and of the mountain-chains of Europe and

Asia. The map-illustrations are accompanied by explanatory memoirs. Of the execution of these maps by Mr. Johnston, Professor Berghaus, an eminent authority and not unlikely to be somewhat *exigeant* from anxiety to see justice done to his own ideas, says: "I now submit to the friends of geography in Britain four sheets of my physical geography, which differ from those of the German edition, in being much larger and more complete." This is high praise and from a quarter whence praise is desirable. Professor Berghaus intimates a disposition, should this specimen of his geographical labours meet with a favourable reception in this country, to continue the undertaking in conjunction with Mr. Johnston. Of the German edition, fifty maps have already been published. It would be creditable to the country were this hint acted upon and a complete English edition of the work called for.

There is much truth in the remark of Baron von Humboldt which Professor Berghaus has chosen for a motto to his physical geography: "C'est le grand avantage des méthodes graphiques appliquées aux différens objets de la philosophie naturelle, de porter dans l'esprit cette conviction intime qui accompagne toujours les notions que nous recevons immédiatement par les sens." It is desirable, it is true, that any over-estimate of this advantage should be avoided. The "conviction intime" which is conveyed to the mind by the inspection of graphic representations of the theories of natural history and geography is valuable, because it is more precise and definite than can be conveyed by words. But there is danger that the "conviction intime" may become belief in the accuracy of such representations without a very critical examination of the evidence by which they are supported. Even the most cautious thinkers are, at times, apt to confound vivid ideas with accurate ideas. It is owing to this tendency of the mind that systems in which imperfectly apprehended truths are mixed up with much incoherence, but which are presented in a picturesque form, as, for example, phrenology and physiognomy, have obtained at times a success not altogether of ephemeral duration. Description in words has this disadvantage, that the writer or speaker's meaning is more liable to be misapprehended. Words are to a certain extent arbitrary representations of thought; every man has his own modification of the ideas attached to them; they call up in his mind notions and trains of thought rather analogous to than identical with those of the person who uses them in the first instance. But a graphic representation, at least as far as forms go, appears the same to all. On the other hand, words do not deceive, as graphic representations are apt to do (at least not to the same extent), by substituting themselves insensibly for the thing represented, and being received in a manner as evidence

of their own truth. In the use of graphic representations, therefore, to express geographical theories, whether regarding the distribution of magnetic forces, isothermal lines, currents of air, or the like, care must be taken to keep constantly in mind that they are not representations of actual facts, but simply of the delineator's inductions,—of his peculiar way of viewing facts. With this caution their utility to science can scarcely be too highly estimated. They give assurance to the propounder of a system that he cannot be misunderstood; and by subjecting him to such a definite method of expressing his ideas, they deter him from obtruding on the world crude, incoherent, half-elaborated theories. They introduce something of the severity of mathematical demonstration into the sciences of experiment and observation.

There is another point of view which suggests caution in the use of map-illustrations of physical theories. The ordinary map itself is not an exact transcript or fac-simile of the earth's surface as it really exists. The mathematical projection necessarily introduces something conventional into its composition; places are represented not in their actual relative position, but in a manner that is understood to indicate that position. With every step made in the graphic delineation of objects, or facts less and less palpable to sense—from the mere surface of the earth to the juxta-position of its mountain-rocks, thence to the distribution of its vegetable products, its isothermal lines, and so on,—what is real in the representation diminishes, and what is conventional increases. In aiming at too much the possible is undervalued; a slovenly style of simple map-making is liable to creep in when the invention of geographers is strained to devise map-illustrations of physical theories. These applications of the map must always be kept in due subordination to the prosaic common-place business of representing localities, their relative positions, latitudes, and longitudes. Graphic illustrations are only valuable so long as they rest upon the basis of good simple maps. Good simple maps are necessities; map-illustrations are, after all, in some measure, the luxuries of science. It is not unnecessary to enforce this truism, for we have seen ingenious and showy map-illustrations, the construction of which, when examined strictly as maps, would have disgraced a school-boy. And it is precisely when advertiring to the physical map-illustrations of Berghaus, that this topic can be introduced without any danger of incurring suspicion that it is done invidiously; for it is difficult to say whether in him the faculties which go to make the accurate critical map-constructor, or those more elevated faculties which go to make the bold yet sagacious physical theorist, are most happily developed. The simple maps of Professor Berghaus are quite as admirable specimens of their class as his map-illustrations of physical theories.

A happier selection could scarcely have been made within so small a compass for illustrating the peculiar merits and utility of Berghaus's great work than that of Mr. Johnston. There is an intimate relation between the isothermal curves and the local prevalence of certain currents of air. Of the fixed features of the globe none seem to bear so directly upon these undulating or varying features as the distribution and arrangement of its mountain chains. And the distribution of vegetable forms is in no slight degree determined by the soil from which they spring, the exposure dependent upon the direction of the inclined planes on which they grow, the local distribution of heat, and the prevailing local currents of the atmosphere. These four map-illustrations, with the memoirs which accompany them, embrace a very considerable part of the whole physical theory of the earth. They embody the most recent discoveries and consequent rectifications of the theory of the earth. They are an invaluable addition to an atlas meant for popular use.

Dr. Kombst's map and notes on the ethnography of Europe display extensive and minute inquiry combined with considerable critical power and a high talent for classification.

Of the maps of general geography in Mr. Johnston's Atlas it is not so easy to speak without, on the one hand, falling into an enumeration of dry and repulsive minutiae, or, on the other, adopting a brevity calculated to mislead. The maps, as is unavoidable in so large a collection, are of unequal value. Those of Scotland and France are, perhaps, the best, while that of Nubia and Abyssinia leaves most to wish for. Much may be done to eliminate casual errors by corrections in successive impressions. It would be unjust to Mr. Johnston to insert here a list of the errors to which we allude. The effect of such a procedure would be to bring out in microscopic detail every blemish, at the same time that all that is good is necessarily kept out of sight. Enough that we know his attention has already been drawn to them ; and that the generous ambition to distinguish himself as a geographer evinced by this publication, which may be considered as his *coup d'essai*, gives warrant that they will not be disregarded. Two of the maps occur to us as proofs, at the same time, of exertion to procure information and judicious caution in using it—the maps of Greece and Spain. The recent changes in the political geography of these countries are given by Mr. Johnston for the first time in a British atlas. But with great judgment, while he has introduced the new governmental divisions on the map of Greece, of which kingdom we have recent and valuable surveys, he has indicated those of Spain in a skeleton map on a small scale on the same sheet with the detailed one, that country being still one of the lacunæ of

European geography. Mr. Johnston, it is to be hoped, will keep the sound judgment indicated by these facts as his guide in all future improvements of his maps; for at a time when geography is making such rapid advances, not a single new impression ought to be taken of any map without revision. It is a remark of universal application that the great sources of defects in maps are, first, the apathetic indolence which is not on the alert to seize every new piece of information; second, the uncritical spirit which jumps at the conclusion that the most recent accounts are always the most correct, and dovetails the statements of the latest traveller into old maps without inquiring into the evidence in support of the novelty, or how far the old and the new cohere.

There is this additional cause of gratification in the appearance of Mr. Johnston's Atlas: it indicates (we learn from his preface that some of the most eminent scientific characters of Scotland have taken an active interest in its progress) an increased attention to this department of knowledge in the "modern Athens." In physical research the capital of Scotland is behind no capital in Europe, but geography has hitherto been sadly neglected there. We hope that this atlas may be taken as a symptom that what the Huttons, Playfairs, Blacks, Leslies, and Jamesons have accomplished in other branches of physical inquiry will now be emulated there in geography. The situation is less favourable for the promotion of general geography than London or Paris, or, perhaps, St. Petersburg; but for the more recondite (and more valuable) labours of scientific geography its opportunities may be rendered quite equal to those of Berlin. It is for this reason that we wish to see the conjoint labours of Professor Berghaus and Mr. Johnston prosecuted further. Let us have a British edition of Berghaus's *Physical Geography*. Such a work would be a worthy supplement to the "Preliminary Dissertations" of the "*Encyclopædia Britannica*," not the least important of Edinburgh's contributions to science.

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